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TITLE: Method for including a self-removing indicator in a self-removing message

Abstract Text (1):
Methods, articles, signals, and systems are provided for providing email message originators and distributors with default control over message removal at a message recipient's location, regardless of whether the message has been opened. For instance, a self-removing message is designated as such by the message's originator, and a self-removal enhancement is added to conventional message content before the message is transmitted over a computer network toward one or more recipients. At the recipient's location, the message is automatically deleted without additional effort by the recipient, before or after being displayed, according to the originator's instructions unless they are overridden by the recipient. Messages may be automatically deleted in response to the arrival of a replacement message. Thus, the burden of removing unsolicited email messages is transferred from recipients to the system and the message's originators and/or to ISPs and other email distributors. Security of messages may also be enhanced.

Brief Summary Text (5):
Email creates annoyances which have not been fully addressed. One common source of annoyance is "spam" email, namely, unsolicited email sent to multiple recipients. Unlike passive advertising, such as pop-up and banner ads on websites, and ads in more traditional print, radio, or television media, "spam" email seeks out its audience, and thrusts itself into the viewer's field of attention without being invited. This can be very annoying because it interrupts other activities, consumes system resources, and perhaps most importantly, requires active efforts by recipients who want to dispose of these unwanted messages. An email recipient may delete unwanted messages manually by using an email Delete command in an email client (e.g., a desktop application program, or web mail pages in a web browser), by dragging the messages in question to a trash can, or by similar steps.

Brief Summary Text (6):
Some email systems provide filters that detect at least some incoming unsolicited email and either deletes it or, more typically, places it in a directory or folder reserved for such messages. But filters sometimes err, either by characterizing as unsolicited email a message that is not, or by failing to detect unsolicited email and letting it through with the normal correspondence from familiar senders. Thus, it would be helpful to provide some alternate or additional means for disposing of unsolicited email.

Brief Summary Text (8):
Moreover, even some mail which is unsolicited is of interest to the recipient only for a limited time. For instance, the fact that a recipient has voluntarily subscribed to an electronic newsletter, a news service, or a listserv list does not necessarily mean that the recipient wants to keep every message from that subscription after reading it. Indeed, despite having subscribed to the service, the recipient may not even want to read each and every message from the subscription service.

Brief Summary Text (10):
Accordingly, it would be an advancement to provide an improved approach to email and similar messaging which moves the email message disposal burden off the shoulders of the recipient. In particular and without limitation, it would be an advance to make public notices and news sent through email less onerous to recipients, and likewise to make email advertisements (including without limitation coupons, contact information, descriptions of goods and/or services, comparisons, and promotional materials) available to multiple recipients without requiring that recipients affirmatively remove unwanted advertisements from their computer systems or create a

reply message having REMOVE or another keyword in the subject, to indicate their lack of interest in the subject matter being advertised.

Brief Summary Text (13):
The present invention relates to methods, articles, signals, and systems for self-removing email messages. Self-removal of email (or other transmitted digital information presentations) can provide at least two advantages. First, self-removing email can be used to enhance the security of a system by reducing the number of message copies and the life span of those copies. Second, self-removing email can be used to reduce the inconvenience of unsolicited email by making it possible for officials, advertisers, and other broadcast email originators to present messages that do not have to be manually removed by the target audience. A given method, article, signal, or system may use self-removing email to enhance message security, to reduce recipient annoyance, or both.

Brief Summary Text (14):
In some embodiments, self-removing email messages are encrypted with conventional tools and techniques. To further enhance security, a message is closely coupled to executable code which reduces the number of copies of the message. Some versions of the code allow any given copy of the message to be viewed at most once.

Brief Summary Text (15):
In some embodiments, self-removing email messages contain advertisements, but the invention may also be used to broadcast or otherwise transmit self-removing email messages which contain other materials that, at least by default, are not stored long-term on the recipient's hard disk or on other intervening nodes (the self-removal action may sometimes be expressly overridden). For instance, news items, confidential materials, and other materials directed to a limited audience such as public notices (changes in the law, election results, tax auction notices, public hearing announcements, and so on), private club notices, and materials intended for mature audiences, may also be transmitted in self-removing email messages.

Brief Summary Text (16):
Unlike traditional email, self-removing email places the burden of selecting messages for removal and then removing them on the software and on the message originator, instead of on the message recipient. "Spam" advertising methods become much less onerous to recipients if the email carrying the advertisements is as effortlessly ephemeral (from the recipient's point of view) as a television or radio commercial. Other aspects and advantages of the present invention will become more fully apparent through the following description.

Drawing Description Text (4):
FIG. 2 is a data flow diagram illustrating a method, signal, and environment using self-removing messages to carry messages from an originator through a network to one or more recipients.

Detailed Description Text (4):
The invention may be used to protect and/or ultimately remove email messages from an individual computer or from one or more computers in a network, including copies of messages stored on removable media or transmitted over a network link and stored on intermediate nodes. FIG. 1 illustrates a system 100 having several computers and several networks 102, 104, 116 which can be configured according to the invention, but those of skill in the art will understand that suitable computer networks include various networks, such as local area networks, wide area networks, metropolitan area networks, and/or various "Internet" or IP networks such as the World Wide Web, a private Internet, a secure Internet, a value-added network, a virtual private network, an extranet, or an intranet.

Detailed Description Text (8):
At least one of the computers 106 is capable of using a floppy drive, tape drive, optical drive, magneto-optical drive, or other means to read a storage medium 120. A suitable storage medium 120 includes a magnetic, optical, or other computer-readable storage device having a specific physical configuration. Suitable storage devices include floppy disks, hard disks, tape, CD-ROMs, PROMs, random access memory, flash memory, and other computer system storage devices. The physical configuration represents data and instructions which cause the computer system to operate in a specific and predefined manner as described herein. Thus, the medium 120 tangibly embodies a program, functions, and/or instructions that are executable by computer(s)

to protect and/or delete email message contents substantially as described herein.

Detailed Description Text (10):
Personal Messaging with Self-Removing Messages

Detailed Description Text (11):
FIG. 2 illustrates a method and environment using self-removing messages to carry messages from an originator 200 at some origin to one or a few recipients 202. As used here, "a few" means less than ten recipients, or alternatively, a small number of recipients who are personally known to the originator; news items, notices, advertisements and/or other messages directed to more than a few recipients are discussed elsewhere herein, although many of the tools and techniques taught herein apply regardless of whether there are only a few recipients.

Detailed Description Text (12):
During a creating step 204 the originator 200 creates a self-removing message 206 using software and hardware configured by the software, or using custom hardware alone, according to the teachings herein. This may be done generally in accordance with familiar tools and techniques for email messaging, attaching files, embedding graphics, encrypting data, and/or compressing data, but it must associate code and/or hardware 208, and/or indicators 210, with the message 206 to perform or facilitate the self-removal message management functions described here. That is, the originator 200 (or equivalently, an embodiment under the originator's direction) marks the message 206 at the origin, includes removal code 208 in the message 206, or does both. The code 208 may be embedded solely in the message 206, but it may also be embedded in plug-ins, modules, routines, objects, threads, or other forms in an ISP's transmission program 224 and/or a recipient's browser or email reception program 226, or the code 208 may be divided between one or more such locations. Code and/or hardware 208, and indicators 210, are collectively termed "self-removal enhancements" herein.

Detailed Description Text (13):
In addition to the message self-removal code 208 in the message 206 and/or elsewhere, the message 206 often includes one or more self-removal indicators 210 such as bitflags, header values, file name extensions, or other data marking the message 206, thereby identifying the entire message 206 or a portion thereof to the removal code 208 and distinguishing the message 206 from messages which are not subject to removal by the means taught herein. Of course, in a system where all messages are entirely self-removing, the indicators 210 are optional unless they are needed to detail information such as how long to display the message contents to the recipient, whether to allow recipients to scroll back through a previously displayed portion of the message contents, and so on. However, batch files, message handling rules, and other deletion controls that are provided by the recipient 202 are not indicators 210, since they do not give originators 200 and/or distributors 222 the responsibility for, and the initial control over, removal of messages at the recipient's location.

Detailed Description Text (14):
In embodiments preferred for this present application, the originator 200 or an embodiment under the originator's direction marks the message 206 at the origin with one or more indicators 210 to facilitate the self-removal message management functions described here. In these embodiments, removal code 208 is not included in the message 206. Instead, removal code 208 is embedded in plug-ins, modules, routines, objects, threads, or other forms in a recipient's browser or email reception program 226. However, the initial decision to make a given message be self-removing still rests with the originator 200 (or with an ISP 222), rather than making the recipient 202 actively delete the message.

Detailed Description Text (15):
In these presently preferred embodiments, self-removal indicators 210 in a given email message 206 permit the originator 200 and/or an intermediate node 220 to indicate to the removal code 208 one or more of the following options:

Detailed Description Text (16):
(a) the message 206 is to be deleted automatically by the removal code 208 from each recipient's mailbox/inbox shortly after being opened by that recipient, e.g., delete the message approximately five minutes after it is opened;

Detailed Description Text (17):

(b) the message 206 is to be deleted automatically by the removal code 208 from each recipient's mailbox/inbox no later than a specified time after being opened by that recipient, and may be deleted before that specified time, e.g., delete the message within 24 hours of receiving it;

Detailed Description Text (18):
(c) the message 206 is to be deleted automatically by the removal code 208 from each recipient's mailbox/inbox no sooner than a specified time after being opened by that recipient, and may be deleted any time after that specified time, e.g., give the recipient 24 hours to make copies, reply, forward the message or otherwise react to the message 206, but delete it after that specified time has elapsed;

Detailed Description Text (19):
(d) the message 206 is to be deleted automatically by the removal code 208 from each recipient's mailbox/inbox no sooner than a first specified time after being opened by that recipient, and no later than a second specified time after being opened, e.g., delete the message within one to seven days of receiving it;

Detailed Description Text (20):
(e) the message 206 is to be deleted automatically by the removal code 208 from each recipient's mailbox/inbox no later than a specified time after being received, regardless of whether it has been opened by that recipient;

Detailed Description Text (21):
(f) the message 206 is to be deleted automatically by the removal code 208 from each recipient's mailbox/inbox no sooner than a specified time after being received, regardless of whether it has been opened by that recipient;

Detailed Description Text (22):
(g) the message 206 is to be deleted automatically by the removal code 208 from each recipient's mailbox/inbox between a first and second specified time after being received, regardless of whether it has been opened by that recipient;

Detailed Description Text (23):
(h) the message 206 is to be deleted automatically by the removal code 208 according to some combination of chronological and/or "has been opened" criteria generally as discussed above, but the chronological criterion is a fixed time or date, rather than an elapsed time, e.g., delete the message 206 no later than Jul. 4, 2001 regardless of whether it has been opened by that date;

Detailed Description Text (24):
(i) the message 206 is to be deleted automatically by the removal code 208 according to some combination of chronological and/or "has been opened" criteria generally as discussed above, but instead of deleting the message only if it has been opened, or deleting it regardless of whether it has been opened, delete the message only if it has not been opened, e.g., if the recipient doesn't bother to open the message 206 because the subject line indicates it is an unwanted solicitation, then the message will be deleted automatically approximately one week after it was received;

Detailed Description Text (25):
(j) the message 206 is to be deleted automatically by the removal code 208 from each recipient's mailbox/inbox, after it has been opened, when a specified storage limitation is reached, e.g., too many messages or too much storage used for messages;

Detailed Description Text (26):
(k) the message 206 is to be deleted automatically by the removal code 208 from each recipient's mailbox/inbox when a specified storage limitation is reached, regardless of whether it has been opened by that recipient;

Detailed Description Text (27):
(l) the message 206 is to be deleted automatically by the removal code 208 from each recipient's mailbox/inbox when the next message is received from the same source, regardless of whether the first message from that source has been opened by that recipient, e.g.,

automatically keep for the recipient only the latest news item from a newsletter subscription;

Detailed Description Text (28):
Note that conventional options for handling attachments may be combined with the removal indicators 210. For instance, conventional email clients such as the Eudora Pro 3.0 program permit one to specify whether an attachment to a message should be deleted when the message is manually deleted. In the present invention, a similar option can specify whether to keep attachments when a self-removing message 206 is automatically deleted.

Detailed Description Text (29):
Note that actions somewhat like these may be taken by a recipient, without any express removal indicator 210 in an email message. For instance, a recipient's email client 226 could be configured to automatically delete any message which remains unopened for more than one week. Likewise, a recipient's email client 226 could be configured to make automatic deletion of a message be the default disposition after the message has been opened. That is, the recipient must manually save desired messages, unlike the conventional approach in which recipients must manually delete undesired messages.

Detailed Description Text (30):
However, to clearly shift the burden of message removal from recipients 202 to originators 200 and/or distributors 222, the message 206 includes one or more express removal indicators 210 which are placed there by the originators 200 and/or distributors 222 to make removal of the message 202 an automatic default result. The actual deletion is performed by the recipient's software 226, but this is done in response to the instructions 210 from the originator 200 and/or distributor 222. Thus, a message subject line such as "GET RICH" or "HOT STOCK TIP" is not a removal indicator 210, even if the recipient has installed a filter that deletes messages containing that subject line, unless the message originator places the subject line in the message with the expectation that the recipient's email tool 226 will automatically delete the message in response to the subject line. Such subject lines are conventionally used to provoke an inquiry or another email reply, not to ensure that the message will be automatically deleted by the recipient's software.

Detailed Description Text (31):
In short, a removal indicator 210 provides an originator 200 and/or a distributor 222 with initial control over the deletion of a message after the message reaches the recipient 202. The control is "initial" in that, in some cases the recipient may override the instructions 210 of the originator 200 and/or distributor 222, such as by saving message content 212 that would otherwise be automatically deleted. But the default handling of the message 206, i.e., the handling in the absence of intervention by the recipient 202, is specified by the originator 200 and/or a distributor 222 via the removal indicator(s) 210.

Detailed Description Text (32):
The message 206 normally includes content 212 which is meant to convey information from the originator 200 to the recipient(s) 202. The message content 212 may be in the form of text (e.g., word processor documents), images (e.g., still or motion image or video files), sounds (e.g., MP3, WAV, or other aural files), or other sensible items, and it may be in-line and/or provided as attachments. Word processors, conventional email tools, and other familiar tools and techniques may be used to select and/or create the message content 212.

Detailed Description Text (33):
The message 206 optionally includes display code 214 and/or security code 216, each of which is discussed further below.

Detailed Description Text (34):
Unlike previous email systems, chat rooms, and other conventional messaging systems, the present invention thus gives email message originators 200 and/or major service providers such as America Online both the opportunity and the presumed burden of marking for removal at least some of the messages 206 they originate or distribute. In conventional email systems, by contrast, recipients are burdened with removing essentially all unwanted messages. The invention promotes efficiency by having the originator 200 and/or distributor 222, who know the message contents 212 and their intended effect, mark the messages 206 for removal after their arrival. This is better than making one or many recipients, who did not necessarily ask to receive the message, attend to its disposal.

Detailed Description Text (35):
The invention also gives originators 200 and/or distributors 222 a choice regarding the transience of their message content 212 at the recipient's location. In conventional chat rooms and instant messaging systems, by contrast, messages are ephemeral at the recipient's station regardless of whether the originator or distributor wishes them to persist there, because they often scroll off the visible display window or screen until they are beyond the recipient's reach.

Detailed Description Text (36):
During one or more transmitting steps 218 the message 206 is transmitted over the signal means 118 from the originator 200 to the recipient(s) 202, possibly via a distributor 222. This may be done generally in accordance with familiar tools and techniques for packet formation, storage, forwarding, error handling, and/or other network 100 transmission means. As the message 206 travels over one or more networks, transmission software and/or hardware in bridges and/or routers 116, servers 108 (including without limitation ISP servers and application servers), and other network intermediate nodes 220 have access to part of all of the message. This access is facilitated by and/or subject to control by distributors 222, namely, ISPs (and other access providers), other authorities, including governmental authorities, and other parties who are neither the message's originator nor the message's intended ultimate recipient. The nodes 220 operate at least in part using conventional networking tools and techniques 224. After they have forwarded or otherwise processed in a conventional manner those portions, these novel intermediate nodes 220 can then delete, shred, or otherwise enhance the security of the message 206 portions by removing them as taught herein.

Detailed Description Text (37):
ISPs and other message distributors 222 may simply forward messages 206. However, the nodes 220 may also be enhanced according to the present invention. For instance, message removal software and/or hardware 208 may configure the intermediate nodes 220 to provide novel capabilities which include identifying packets or other message 206 portions, up to and including the entire message 206, through the self-removal indicators 210 and/or modifying messages 206.

Detailed Description Text (38):
For instance, distributors 222 may verify that email messages 206 from a given originator 200 contain agreed-upon removal indicators 210. In particular, for the convenience of advertising message recipients, a distributor 222 may grant use of a member list of email addresses for limited advertising purposes on condition that the emailed advertisements contain indicators 210 which will cause them to be automatically removed. The distributor 222 may then check some or all of the messages 206 to verify compliance with that contractual requirement.

Detailed Description Text (39):
Alternately, the agreed-upon removal indicators 210 may be actually inserted by the distributor 222, pursuant to a contractual requirement or to distributor 222 operating policy. Identification of messages for indicator 210 insertion may be based on the originator's email address, on the subject line of the message, and/or on other filtering criteria. For instance, an access provider 222 may insert removal indicators 210 in all messages (regardless of origination address) which contain "$$$" in the subject line, so that those messages are automatically deleted one day after being opened or one week after being received, whichever occurs first.

Detailed Description Text (40):
For instance, an access provider 222 such as AOL, CompuServe, or Prodigy may permit controlled mailings to its members on condition that each message 206 include an indicator 210 that will cause the message 206 to be automatically removed from the recipient member's email "In Box" after the recipient member 202 opens it, unless the recipient 202 actively overrides that removal to save the message's contents 212. Likewise, an ISP could use indicators 210 to implement a promise that authorized email advertisements will consume no more than one half-megabyte of a recipient's hard drive, by having the indicators 210 set to cause automatic deletion of messages from a given list of sources, thereby freeing drive space, when the total space used by all messages from those sources exceeds a storage limit of one half-megabyte. Indicators 210 could likewise indicate that self-removing messages 206 should be removed when the hard drive or partition holding them has only a specified amount of free space left, or when a specified percentage of the total drive/partition space becomes used.

Detailed Description Text (41):
In some embodiments, the email tool 226 warns users that messages 206 are subject to automatic deletion. Accordingly, a message 206 which meets the automatic removal criteria (e.g., "$$$" in the subject line) can be preserved by the recipient 202 if they so desire, despite the insertion of removal indicators 210 by the access provider 222 and/or by the message originator 200.

Detailed Description Text (42):
Eventually a transmission step 218 brings the message 206 to a recipient's station 226. This may be done generally in accordance with familiar tools and techniques, including without limitation web browsers and email programs adapted with at least removal code 208 according to the invention through plug-ins or other means, and protocols such as SMTP, MIME, POP, IMAP, Privacy Enhanced Mail, listserv protocols, and usenet protocols. At the recipient's station 226 the message 206 is optionally authenticated 228, optionally decrypted 230, displayed 232, removed 234 by removal code 208 operating in response to message indicators 210 in the message 206, and optionally acknowledged 236. Each of these steps is discussed at various points herein; at present, the focus is on the displaying step 232 and the removing step 234.

Detailed Description Text (43):
During the displaying step 232, the message content 212 is displayed 232 to the recipient 202. This may be done immediately upon arrival of the message 206 without prompting from the recipient 202, or it may occur as a result of the message's icon or title being highlighted, opened, clicked on, or otherwise activated by the recipient 202. The displaying step 232 may limit message contents 212 to volatile memory (as opposed to disk or other non-volatile storage), may prevent forwarding of the message 206, may disable screen save functionality, may overwrite the message contents 212 shortly after displaying them, may give the recipient 202 the option of overriding some or all of these default settings, and so on, as described herein. In particular, the recipient 202 may be warned that the message 206 is subject to automatic removal.

Detailed Description Text (44):
Finally, the message 206 is removed 234 by overwriting the window or screen that displayed it, by deleting it or otherwise moving it from an In Box to a Trash folder or the like, by marking the space it occupies as free, by erasing its contents from disk, and/or in other ways, as discussed herein. Messages 206 may also be removed after being only partly displayed, or after sufficient time passes or some other event occurs, such as a reboot, or an browser restart.

Detailed Description Text (45):
Broadcasting with Self-Removing Messages

Detailed Description Text (46):
The novel tools and techniques illustrated in FIG. 2 can also be used when the originator 200 sends a self-removing message 206 to more than a few recipients 202. For instance, public agencies and private litigants may wish to send messages 206 containing legal notices of the type which are conventionally published in newspapers. In the case of public agencies, email address databases could be compiled in connection with tax payments, corporate and professional license registrations and renewals, driver license registrations and renewals, and similar governmental functions. Care would be taken (and appropriate legislation and/or regulations put in place) to limit or prevent the use of such governmental email address databases by private or quasi-private entities.

Detailed Description Text (47):
However, private entities may appropriately use the invention, in accordance with applicable law, to broadcast self-removing messages 206 to large target audiences. For instance, a business might send registered customers new product announcements or press releases. Likewise, a private club or organization (or a business) might send event announcements to its members (or prospects) using self-removing messages 206. Subscribers to newsletters or other news services may also receive news items in the content 212 of self-removing messages 206.

Detailed Description Text (48):
Advertising and News with Self-Removing Messages

Detailed Description Text (50):
By shifting the burden of message disposal away from recipients 202 and onto the system 100 and the originator 200, the invention reduces the tension created by simultaneously imposing on the recipient to dispose of the message and asking the recipient to investigate or purchase the advertised products or services, or to visit the news provider's web site, which often carries advertising. Reducing this tension will make direct and indirect email advertising better received and hence more effective.

Detailed Description Text (51):
In one embodiment, self-removing email messages 206 contain advertisements of any of a broad range of services and goods which are presently described in unsolicited mass-mailing emails, in website banner ads, in television or radio spots, in newspapers and magazines, and in other forms and media. In one embodiment, they contain news items which are mailed to subscribers who voluntarily provided their email addresses for that purpose. Unlike television, radio, newspapers, and magazines, ads and news sent through the Internet and other electronic media can be relatively inexpensive, targeted, interactive, and/or provide hot links to web sites, newsgroups, IRC channels, and other digital network resources. Like unsolicited emails and banner ads, the messages 206 can be animated, with audio and/or visual components, and hot links. Unlike unsolicited emails and some banner ads, the self-removing message files 206 of the present invention do not require that recipients 202 affirmatively remove unwanted ads or old news from their computer system disk or create a reply message having REMOVE in the subject, to indicate their lack of interest in the subject matter being advertised, to conserve space, and/or to reduce clutter in their inbox.

Detailed Description Text (52):
Self-removing email tools and techniques described herein can also be used to broadcast, multicast, or otherwise transmit explicit (intended for mature audiences only) materials without requiring permanent storage of such materials on the recipient's computer system. Some people 200, 202 may find this useful for medical or health discussions, such as support groups and professionals dealing with the difficult personal and social issues arising from conditions such as breast cancer or acquired immune deficiency syndrome. Some people may also find this useful for personal entertainment using sexually explicit materials. Within the bounds allowed by law, the invention may assist such uses.

Detailed Description Text (54):
FIG. 3 illustrates a subset of the embodiments illustrated in FIGS. 1 and 2. Except as noted otherwise below, the illustrated steps and components are as described elsewhere herein. However, these embodiments focus on increasing convenience to the recipient through automatic removal of messages, rather than increasing security through such removal. Although security measures such as encryption, security code 216, secure deletion in the form of electronic shredding, atomicity in display code 214, incremental overwrites while incrementally displaying message content, Print Screen disabling, message self-modification, searches for additional message copies, and authentication may be employed in embodiments according to FIG. 3, they are not central to the invention in such embodiments.

Detailed Description Text (55):
FIG. 3 also further illustrates the removal indicators 210, which may be used in embodiments according to any of the Figures. Four sample categories of indicators 210 are shown. A first category of indicators 300 includes indicators 210 which control automatic message 206 removal according to whether the message 206 has been opened by the recipient 202. For instance, an indicator 300 may specify that the message 206 is to be deleted automatically by the removal code 208 from each recipient's mailbox/inbox within one to seven days of when the recipient 202 opens the message 206 to read it.

Detailed Description Text (56):
A second category of indicators 302 includes indicators 210 which control automatic message 206 removal according to whether a fixed time and/or date has been reached, or a specified time has elapsed since some event such as original transmission of the message, receipt of the message, or first opening of the message. For instance, an indicator 302 may specify that the message 206 is to be deleted automatically by the removal code 208 from each recipient's mailbox/inbox on Dec. 31, 2001.

Detailed Description Text (57):

A third category of indicators 304 includes indicators 210 which control automatic message 206 removal according to conditions involving a replacement message. A replacement message replaces a prior message, so the prior message is deleted. For instance, an indicator 304 may specify that the message 206 is to be deleted automatically by the removal code 208 from a recipient's mailbox/inbox after that recipient receives the next message from LawPlusPlus.com with "Update" in the subject. Similarly, an indicator 304 may specify that a message 206 is to be deleted automatically by the removal code 208 from a recipient's mailbox/inbox if a replacement message is not received by the recipient 202 by a specified date or within a specified period after the first message 206 is received.

Detailed Description Text (58):
Earlier message(s) to be replaced may be identified in the replacement message by one or more values such as source address, date, or subject line. Messages being replaced are preferably also identified by a key, certificate, password, or other authentication mechanism presented by the replacement message to the removal code 208, in order to discourage malicious "replacement" messages which are actually sent to delete unrelated earlier messages.

Detailed Description Text (59):
A fourth category of indicators 306 includes indicators 210 which control automatic message 206 removal according to whether a storage limit has been reached. For instance, an indicator 306 may specify that the message 206 is to be deleted automatically by the removal code 208 from each recipient's mailbox/inbox after the number of saved messages in a specified folder reaches one thousand, or after the amount of disk space taken by the saved messages reaches three megabytes, or when the disk partition has less than one megabyte of free space left.

Detailed Description Text (60):
A given indicator 210 may belong to more than one category. For instance, an indicator may specify that the message is to be automatically removed when a replacement message arrives or one week after being opened, whichever occurs first.

Detailed Description Text (61):
More generally, FIG. 3 illustrates methods for using self-removing messages 206 to make email messaging more convenient for message recipients by shifting the burden of message removal from the message recipient 202 to at least one of the message originator 200 and the message distributor 222. Through removal indicators 210 and/or removal code 208 which is associated with message content 212 by the message originator 200 and/or the message distributor 222, the methods provide the message originator 200 and/or the message distributor 222 with initial control over the deletion of a recipient copy of the message content 212 after that content and the self-removal enhancement reach the recipient 202. Unlike prior approaches, the message content copy at the recipient's location may be automatically deleted in response to various criteria, even if the message containing the content 212 has already been opened by the recipient 202. As with other methods of the invention, the methods illustrated by FIG. 3 may be embodied in software which configures a computer storage medium such as a CD, floppy disk, hard drive, ROM, or RAM.

Detailed Description Text (62):
The methods associate message content 212 with a self-removal enhancement such as one or more self-removing message indicators 210. The association between the message contents 212 and the self-removal enhancement is made by the message originator 200, by the message distributor 222, or both. It may be performed by placing removal code 208 in the message (e.g., as an attachment). But it is preferably performed by placing one or more removal indicators 210 in the message (e.g., in an email header or an email subject line) with the content 212.

Detailed Description Text (63):
In alternative embodiments, the method does not place the self-removal enhancement in the same message as the content 212 that is thus made subject to removal. Instead, the method may associate message content 212 with a self-removal enhancement by placing the enhancement in an email message 206 which identifies a separate message, if the content 212 is provided in the separate message. That is, the association may be made by sending the email message contents 212 in one partial transmission 218 to the recipient 202 and sending the self-removal enhancement in a separate partial transmission 218 (before or after the content 212 is sent), and by ensuring that the enhancement portion of the transmission 218 permits identification of the intended content 212. For instance, an ISP 222 may transmit to its member email tools 226

an instruction which indicates that any subsequent message from an email address specified in the instruction should be subject to automatic removal one day after being opened, and that the recipient should be warned of this when such a message is opened.

Detailed Description Text (65):
Inventive methods may be employed by the distributor 222, or by an authorized agent/subcontractor/service/etc. acting for the distributor 222, to verify that self-removing messages 206 are being used to shift the burden of message removal from message recipients 202. For instance, as indicated generally in FIGS. 2 and 3, in some systems the distributor 222 receives at one or more intermediate nodes 220 a message intended for the recipient 202. The distributor 222 etc. may use software 208 to check the message to determine whether the message contains a self-removing message indicator 210. This may check for a particular indicator 210, or for more than one indicator 210, or for at least one indicator 210 from a specified group of indicators 210. Checks for indicator(s) 210 may be performed by reading the email header, email subject line, and/or other expected location(s) of the indicator(s) 210.

Detailed Description Text (66):
The check for a self-removal enhancement in a given message may be triggered by one or more one predetermined check triggering criteria which indicate that a self-removing message indicator 210 should be present. A self-removing message indicator 210 itself is not a triggering criterion. In some cases, an indicator 210 or other self-removal enhancement is expected because the message is from an entity that has an agreement with the distributor 222 permitting mass mailings through the distributor 222 subject to use of the self-removal enhancement. For instance, the message may come from a source address on a list of advertisers who have mailing contracts with the distributor 222 or a license to use the distributor's membership email database.

Detailed Description Text (67):
In other cases, a self-removal enhancement is not expected but should nonetheless be present because the message is part of an unauthorized mass mailing. The check triggering criteria may include criteria for detecting "spam" email through random sampling, conventional traffic monitoring, suspicious address monitoring, and the like. For instance, the message may contain keywords or phrases that suggest it should be subject to automatic removal for the recipients' convenience. The message may have come from a source address that is sending a large number of messages in a short time, or from an address that is responsible for numerous messages to nonfunctional destination addresses ("bounced" messages arising from use of an email database containing many incorrect or obsolete addresses).

Detailed Description Text (68):
In short, check triggering criteria used by or for the distributor 222 may identify the message as one that originates with an authorized advertiser or another authorized entity. In this case, the invention allows the distributor 222 to monitor compliance with distributor contracts and/or policies, laws, or regulations that require automatic message removal. Check determining triggering criteria may also identify the message as one that originates as part of a mass mailing that was not expressly authorized. In that case, the invention provides the distributor 222 with an option less extreme than the conventional choice of either (i) allowing the mailing to continue as is, or (ii) attempting to block it entirely. Instead, the messages that were not previously self-removing can be modified by or for the distributor 222 to add a self-removal enhancement, so that recipients 202 receive the messages but are not unduly inconvenienced by them. Conversely, the distributor 222 etc. may strip out self-removal enhancements, so that messages 206 are modified to become not self-removing.

Detailed Description Text (69):
If the checking step at the node 220 determines that the message contains or is otherwise subject to a self-removing message indicator 210 as expected, then the node 220 transmits the message 206 on toward the recipient 202. But if the checking step determines that the message does not contain indicator(s) 210 as expected, then the message may be blocked to prevent further transmittal to the recipient 202, e.g., by being deleted, dropped, or rerouted back to the originator. Alternately, the lack of expected indicator(s) 210 may be remedied by inserting one or more indicators 210 in the message and then transmitting the resulting message 206 from the intermediate node 220 toward the recipient 202.

Detailed Description Text (70):

At the recipient 202 (e.g., at the recipient's mail server and/or at the recipient's laptop, wireless device, or other workstation), removal code 208 checks incoming messages to determine whether they contain any self-removing message indicators 210 from message originators 200 and/or message distributors 222. The removal code 208 then automatically notifies the recipient 202, removes messages 206, and otherwise proceeds in response to such indicators 210 with each message 206 which contains or is otherwise associated with an indicator 210. Note that deletion instructions provided by the recipient 202 are not indicators 210, since they do not give originators 200 and/or distributors 222 responsibility for, and initial control over, removal of messages at the recipient's location.

Detailed Description Text (73):
In one embodiment, a self-removing email file includes several message components 206 which display themselves in groups of one or more components each, and then self-remove 234 the displayed 232 components. The display 232 of a given group may be triggered by an event such as arrival at the recipient's system 226, the opening of an outer email envelope, the launching of a certain application, the passage of a predetermined time period, or the arrival of a predetermined date.

Detailed Description Text (74):
In one embodiment, a self-removing email file's self-removal property can be expressly overridden by the sender 200, by the recipient 202, by an intervening authority 222 such as an ISP or an authorized government agency, or by some combination of these. In some cases, the override is silent, and in others the sender 200 or recipient 202 or both are automatically notified of the override.

Detailed Description Text (75):
In some embodiments, a reply email (self-removing or not) is sent 236 automatically to the sender 200 when the recipient 202 has opened the self-removing email message 206. In some cases, the possibility of a reply is an explicit option presented to the user 200 or 202; in some of these cases, the options presented include one to send 236 a reply asking that the recipient 202 be removed from the mailing list. This allows the recipient 202 to request removal by doing little or nothing more than opening the unsolicited message 206 and clicking on a "REMOVE FROM MAILING LIST" box or button. In some embodiments, the recipient 202 is given the option of inserting text or other digital material in the reply.

Detailed Description Text (76):
In one embodiment, a message to be emailed is embedded in an executable (interpretable, etc.) file and the file 206 is emailed. When the recipient 202 tries to open the message 206 the executable portion runs an authentication operation 228. If the recipient 202 is authorized and the message file 206 has not already been opened, then an executable portion 214 of the file 206 and/or a conventional part of the recipient station 226 displays 232 the message. The message 206 then deletes itself, thereby deleting the displayed copy of the message and preventing the code that did the display from redisplaying the message later. The deletion 234 may include an electronic shredding form of deletion, which overwrites the file (possibly several times) rather than merely marking it as free.

Detailed Description Text (77):
In one embodiment, the displaying portion 214 of the executable code and the deleting portion 208 of the executable code are executed as one atomic operation, with the atomicity enforced by the operating system and/or by the particular processor on which the message file 206 executes. Tools and techniques for enforcing atomicity are well known, in the database arts and elsewhere.

Detailed Description Text (78):
In one embodiment, the message file 206 incrementally overwrites itself while incrementally displaying 232 its message, with the overwriting and displaying increments interleaved in their operation. After decrypting 230 the message to form a block of message content 212 bytes in RAM, execution of displaying code 214 and removing code 208 is interleaved as follows. The embodiment exchanges the video display bytes (which are something other than the message content 212) with the message content bytes (which are placed in a format used by the video display buffer). Several bytes at a time may also be thus exchanged. Each exchange displays another increment of the message and also overwrites part of the message content 212 with whatever was previously being displayed.

Detailed Description Text (79):
In one embodiment, the message file 206 loads itself into memory, deletes itself from disk in partial or complete performance of an active removal step 234, verifies the deletion, and only then performs the display operation 232. Concurrently with or shortly after the display, the message file may additionally overwrite itself in memory to complete step 234.

Detailed Description Text (80):
Tools and techniques familiar to those of skill in the art for self-modifying code and/or self-deleting programs such as self-deleting scripts or self-deleting installers may be helpful during implementation of particular embodiments of the invention. Likewise, techniques used in Trojan horses, worms, viruses, and other programs which hide and/or propagate themselves may be modified for use in inventive email message files 206 which destroy themselves after displaying the message they carry. For instance, tools and techniques such as those employed in U.S. Pat. No. 5,623,600 may be adapted for use in the present invention.

Detailed Description Text (81):
In some embodiments, the message file 206 installs the message content 212 (or the entire message file 206 itself) in locations on the hard disk and/or in memory which are subject to frequent overwriting once deallocated. Suitable locations include unused clusters temporarily marked as allocated in file allocation tables, or swap files, or portions of RAM that are overwritten or scrambled during a reboot. After displaying its embedded message, the embodiment then marks itself (or at least the portion containing the message) as deallocated and forces overwriting during step 234. For instance, the embodiment may force a reboot to scramble or overwrite RAM containing the message or mark temporarily allocated clusters free once more.

Detailed Description Text (82):
The message content 212 may be encrypted so it cannot be read by simply viewing the message file 206 in a debugger and looking for strings. During authentication 228, the message file 206 may also require a password or key from the recipient 202 before decrypting 230 and displaying 232 the message.

Detailed Description Text (83):
Alternatively, the message file 206 may be self-decrypting (similar in spirit to self-extracting ZIP files) once it has verified its current location 226 as the one corresponding to the intended recipient 202. Thus, copies on ISP servers or other intermediate network nodes remain encrypted, but the copy of the message file 206 at the recipient's network address will decrypt 230 when launched.

Detailed Description Text (84):
Network addresses, environmental parameters such as the surrounding processor and operating system, previously sent ID files, digital certificates, tokens (software or hardware), and other means can be used by the message file 206 to determine its present location. For instance, this can be done by checking the current IP or other network address against an address specified (directly or in terms of an email address) by the sender 200. If the email connection is available, a packet can also be sent to a specified location and the address on the response packet can be examined. Of course, the recipient's environment is not always fully known, and it can be imitated. But imposing "proper location" as a requirement for message content 212 display 232 makes it harder to gain unauthorized access to those contents 212.

Detailed Description Text (85):
In some embodiments, means are used to make the use of a debugger generally, and the use of break points or trace points in particular, result in self-destruction of the message file 206 without display of the message contents 212, or at least in a failure to decrypt and display the message content 212. Suitable means 216 include (a) timed loops with conditionals that change behavior based on the time required to execute the loop (debugging is detected as unusually slow execution); (b) checksums on the current code 208 in memory (insertion of breakpoints alters the checksum); and (c) the interrupt vector table is temporarily modified to ignore keyboard and mouse input and hence disable debugger commands (the message content 212 is displayed a preset period of time and then disappears forever).

Detailed Description Text (87):
In some embodiments, the message file 206 checks as much of the local environment as possible

for other copies of itself and permanently deletes 234 them before displaying 232 the message content 212. Some embodiments only search for the message's file name in other directories, while other embodiments search for files of the same length or recently created files and then examine those files more closely, in case the copy has been renamed. Techniques used to identify viruses can also be modified to help the message file 206 identify copies of itself.

Detailed Description Text (88):
In some embodiments, techniques used in so-called "copy protection schemes" are used by the security code 216 to help prevent copying of the message file 206. The techniques are modified to allow copying by network system software as necessary for the message file 206 to travel across the network 100 from the originator 200 to the authorized recipient(s) 202.

Detailed Description Text (89):
One embodiment does not initially delete itself after displaying the message contents 212. Instead, the message file 206 removal code 208 self-modifies to become a searcher. The searcher has a limited life span, measured either by elapsed time since its inception or by the number of times the searcher or its direct ancestors have been launched for execution.

Detailed Description Text (90):
Thus, the first time the message file 206 is run, it displays 232 the message content 212, overwrites the message content 212, and notes internally that it has done so. The next N-1 times it is launched, it runs as a searcher. The searcher displays a dummy message such as "Decrypting message; please wait . . . " to gain time while actually searching for other copies and permanently deleting 234 them. After finishing the search (and performing any appropriate deletions), the searcher displays a message such as "Decryption failed. Please contact X for assistance." X might be the message originator 200, the message recipient 202, or both, and/or their corresponding system administrators. The Nth time the searcher is run, the message file (searcher) permanently deletes 234 itself. In a variation, the searcher 206 spawns additional searchers that behave in a similar manner.

Detailed Description Text (91):
In one embodiment, a timestamp representing a limited life span is embedded in the message file 206, and if the current time (as indicated by a call made on the recipient's system) indicates that the intended life span has elapsed, then the message file simply deletes itself without displaying the message contents. Tools and techniques such as those employed in U.S. Pat. No. 5,786,817 may be adapted for use in the present invention.

Detailed Description Text (94):
For instance, the message 206 may embody novel signals such as the self-removal indicators 210, and/or the various codes such as removal code 208 for performing the removing step 234, display code 214 for performing the displaying step 232, and security code 216 for performing the authenticating step 228 or other security-enhancing steps such as disabling print screen or debugger functions. The signals may be embodied in "wires" 118, RAM, disk, or other storage media or data carriers.

Detailed Description Text (95):
Articles of manufacture within the scope of the present invention include a computer-readable storage medium in combination with the specific physical configuration of a substrate of the computer-readable storage medium. The substrate configuration represents data and instructions which cause the computers to operate in a specific and predefined manner as described herein. Suitable storage devices include floppy disks, hard disks, tape, CD-ROMs, RAM, flash memory, and other media readable by one or more of the computers. Each such medium tangibly embodies a program, functions, and/or instructions that are executable by the machines to perform self-removing message creation, transmission, removal, display or other method steps substantially as described herein, including without limitation methods which perform some or all of the steps illustrated in FIG. 2. To the extent permitted by applicable law, programs which perform such methods are also within the scope of the invention.

Detailed Description Text (97):
In summary, the present invention provides a novel way to protect confidential and proprietary email message contents without substantially reducing the ease and convenience of email transmission. In fact, the ease of use for email recipients is increased, because they no longer need to imprecisely filter or manually remove unsolicited notices or advertisements.

Message originators also have more control over the persistence of their messages after the messages are sent, even if messages have been opened. ISPs and other distributors can verify and/or insert self-removal instructions to make sure that directed mailings to their members comply with automatic removal requirements.

Detailed Description Text (98):
Increased security is achieved, for instance, when email messages are embedded in executable files, each of which displays its particular message once and then permanently deletes itself and any copies of itself it can find. The message files may be embodied in computer storage media or (while in transit) in network connections.

Detailed Description Text (99):
One embodiment employing message files at least for increased security according to the invention includes the following:

Detailed Description Text (100):
uninstaller tools and techniques as a means for locating copies of the message file;

Detailed Description Text (101):
copy protection tools and techniques as a means for preventing creation of copies of the message file except as needed by the message file originator's email sending software, by the network transmission software, and by the intended recipient's email receiving software;

Detailed Description Text (102):
encryption tools and techniques as a means for encrypting the message contents in the message file and decrypting the message contents as part of an atomic display-and-self-destruct step;

Detailed Description Text (103):
virus detection tools and techniques, and uninstaller software tools and techniques, each as a means for locating unauthorized or no longer needed (e.g., copies made along the network transmission path after the received message has been displayed) copies of the message file (or of an extracted message) to be permanently deleted;

Detailed Description Text (104):
electronic file shredder tools and techniques as a means for permanently deleting (erasing, removing, destroying) unauthorized or no longer needed copies of the message file;

Detailed Description Text (105):
self-modifying code tools and techniques as a means for deleting the message file as the message is being displayed and/or for modifying the message file to spawn and manage searcher computer processes which seek out and permanently delete unauthorized or no longer needed copies of the message file;

Detailed Description Text (106):
anti-reverse engineering and obfuscation tools and techniques, and digital signature or checksum tools and techniques, and interrupt manipulation tools and techniques, each as a means for protecting the integrity and security of the message file contents prior to authorized display of the message, each possibly in conjunction with encryption tools and techniques; and

Detailed Description Text (107):
email and networking tools and techniques as a means for authorized copying and transmission of the intact message file from the originator to the intended and authorized recipient.

Detailed Description Text (108):
A particular order and grouping may be indicated in examples for method steps of the invention. However, those of skill will appreciate that the steps illustrated and discussed in this document may be performed in various orders, including concurrently, except in those cases in which the results of one step are required as input to another step. For instance, deletion from disk during step 234 may precede display of the message during step 232, and may be filed by or interleaved with deletion of message contents 212 from RAM. Likewise, steps may be omitted unless called for in the claims, regardless of whether they are expressly described as optional in this Detailed Description. For instance, encryption steps, anti-debugger steps, and screen print disabling steps are all optional actions by the security code 216, which is itself

an option component in the message 206. Steps may also be repeated (e.g., transmittal between nodes during step 218), or combined (e.g., atomic display and removal steps 232 plus 234), or named differently.

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Amendment (For Entry) in application No. 09/618,249 filed Jul. 18, 2000, which is a sibling of the present application, in that both applications are continuations-in-part of the same parent, application No. 09/399,066 filed Sep. 18, 1999; the Amend-ment is dated Jul. 18, 2001; the Amendment presents claims involving a "replacement message" and the present application also presents claims involving a "replacement message"; it is respectfully suggested that the Office perform a double-patenting analysis.

CLAIMS:

1. A method for using self-removing email messages to shift the burden of message removal from a message recipient to at least one of a message originator and a message distributor, the method comprising the steps of: associating message content with at least one self-removing message indicator to provide at least one of a message originator and a message distributor with initial control over the deletion of a recipient copy of the message content after it reaches the recipient; and transmitting the message content and the self-removing message indicator toward the recipient in at least one email message; wherein the self-removing message indicator indicates that the message is to be deleted automatically in response to a condition involving a replacement message.

2. The method of claim 1, wherein the self-removing message indicator indicates that the message is to be deleted automatically if a replacement message is not received by the recipient by a specified date.

4. The method of claim 1, wherein the self-removing message indicator indicates that the first message is to be deleted automatically if a replacement message is not received by the recipient within a specified period after the first message is received.

6. The method of claim 1, wherein the self-removing message indicator indicates that the message is to be deleted automatically after a replacement message is received by the recipient.

8. The method of claim 1, wherein the associating step associates message content with a self-removing message indicator by placing the indicator in an email message with the content.

9. The method of claim 1, wherein the associating step associates message content with a self-removing message indicator by placing the indicator in an email message which identifies a separate message and the content is provided in the separate message.

10. The method of claim 1, wherein the associating step is performed by a message originator.

11. The method of claim 1, wherein the associating step is performed by a message distributor.

13. The method of claim 1, wherein the method comprises transmitting message contents which include a notice.

14. The method of claim 1, wherein the method comprises transmitting message contents which include a news item.

15. The method of claim 1, wherein the method comprises transmitting message contents which include an advertisement.

16. The method of claim 1, wherein the method comprises transmitting message contents which include a link to a web site.

17. A method for removing email messages from a recipient's location in response to an instruction from a message originator, the method comprising the steps of: checking an email message at the recipient's location to determine whether it contains a self-removing message indicator from the message originator indicating that the message is to be deleted automatically in response to a condition involving a replacement message; and automatically removing the email message in response to the indicator if the message contains the indicator.

19. The method of claim 17, further comprising the step of a sending a reply from the recipient in response to the self-removing message.

21. In a computer system, an improvement for using self-removing email messages to shift the burden of message removal from a message recipient to at least one of a message originator and a message distributor, the improvement comprising at least one self-removal enhancement which is associated with message content by at least one of a message originator and a message distributor, the self-removal enhancement specifying a condition for automatic removal of a copy of the message content from a recipient's location in response to a condition involving a replacement message.

22. The system of claim 21, wherein the self-removal enhancement comprises a removal indicator placed in an email message.

23. The system of claim 21, wherein the self-removal enhancement comprises removal code attached to the message.

24. The system of claim 21, wherein the self-removal enhancement is associated with the message by an ISP.

25. The system of claim 21, wherein the self-removal enhancement includes an authentication mechanism to permit authentication of a replacement message before a replaced message is removed.

Previous Doc Next Doc Go to Doc#

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TITLE: Method for including a self-removing indicator in a self-removing message

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INVENTOR-INFORMATION:

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PARENT-CASE:
RELATED APPLICATIONS This application is a continuation-in-part of commonly owned copending application Ser. No. 09/399,066 filed Sep. 18, 1999, now pending, through which this application also claims priority to application Ser. No. 60/101,517 filed Sep. 23, 1998 and to application Ser. No. 60/104,138 filed Oct. 14, 1998.

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PRIOR-ART-DISCLOSED:

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Other Application Claims (claims of application 1384.2.6G: 09/619,933 filed Jul. 20, 2000).
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ART-UNIT: 2141

PRIMARY-EXAMINER: Luu; Le Hien

ATTY-AGENT-FIRM: Computer Law++

ABSTRACT:

Methods, articles, signals, and systems are provided for providing email message originators and distributors with default control over message removal at a message recipient's location, regardless of whether the message has been opened. For instance, a self-removing message is designated as such by the message's originator, and a self-removal enhancement is added to conventional message content before the message is transmitted over a computer network toward one or more recipients. At the recipient's location, the message is automatically deleted without additional effort by the recipient, before or after being displayed, according to the originator's instructions unless they are overridden by the recipient. Messages may be automatically deleted in response to the arrival of a replacement message. Thus, the burden of removing unsolicited email messages is transferred from recipients to the system and the message's originators and/or to ISPs and other email distributors. Security of messages may also be enhanced.

25 Claims, 3 Drawing figures

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

☐ 2. Document ID: US 6711608 B1

L5: Entry 2 of 14 File: USPT Mar 23, 2004

US-PAT-NO: 6711608
DOCUMENT-IDENTIFIER: US 6711608 B1

TITLE: Method for including a self-removing code in a self-removing message

DATE-ISSUED: March 23, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ogilvie; John W. L.	Salt Lake City	UT	84105	

APPL-NO: 09/ 399066 [PALM]
DATE FILED: September 18, 1999

PARENT-CASE:
RELATED APPLICATIONS This application claims priority to the following commonly owned provisional patent applications: serial No. 60/101,517 filed Sep. 23, 1998, and serial No. 60/104,138 filed Oct. 14, 1998.

INT-CL: [07] G06 F 15/16

US-CL-ISSUED: 709/206; 709/202
US-CL-CURRENT: 709/206; 709/202

FIELD-OF-SEARCH: 709/200, 709/202, 709/206, 709/246, 709/249, 707/10, 345/333, 455/415

PRIOR-ART-DISCLOSED:

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M. Vigen, "Business or Pleasure? Understanding AOL Instant Messenger and the Rapidly Evolving Future of Instant Messaging", May 2000.
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ART-UNIT: 2141

PRIMARY-EXAMINER: Luu; Le Hien

ATTY-AGENT-FIRM: Computer Law + +

ABSTRACT:

Methods, articles, signals, and systems are provided for protecting email message contents. A self-removing message is designated as such by the message's originator, and a self-removal enhancement such as self-removal code or self-removal indicators are added to conventional message content before the message is transmitted over a computer network toward one or more recipients. Copies of the message may be removed from intermediate network nodes by software which recognizes, and acts in response to, self-removal indicators. At the recipient's location, the message is displayed and then removed from disk and from memory without additional effort by the recipient. Thus, the burden of removing unsolicited email messages is transferred from recipients to the system and the message's originator. Security of messages may also be enhanced by reducing the number of copies of confidential message content and/or the accessible life span of those copies.

12 Claims, 2 Drawing figures

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

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☐ 3. Document ID: US 6701347 B1

L5: Entry 3 of 14 File: USPT Mar 2, 2004

US-PAT-NO: 6701347
DOCUMENT-IDENTIFIER: US 6701347 B1

TITLE: Method for including a self-removing code in a self-removing email message that contains an advertisement

DATE-ISSUED: March 2, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ogilvie; John W. L.	Salt Lake City	UT	84105	

APPL-NO: 09/ 619933 [PALM]
DATE FILED: July 20, 2000

PARENT-CASE:
RELATED APPLICATIONS This application is a continuation-in-part of commonly owned copending application Ser. No. 09/399,066 filed Sep. 18, 1999, through which this application also claims priority to application Ser. No. 60/101,517 filed Sep. 23, 1998 and to application Ser. No. 60/104,138 filed Oct. 14, 1998.

INT-CL: [07] G06 F 15/16

US-CL-ISSUED: 709/206; 709/202
US-CL-CURRENT: 709/206; 709/202

FIELD-OF-SEARCH: 709/206, 709/207, 709/200, 709/249, 709/202, 707/10, 345/333, 455/415, 714/748

PRIOR-ART-DISCLOSED:

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This e-mail will self-destruct in. . . , pp. 1-3, Oct. 11, 1999.
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ART-UNIT: 2141

PRIMARY-EXAMINER: Luu; Le Hien

ATTY-AGENT-FIRM: Computer Law ++

ABSTRACT:

Methods, articles, signals, and systems are provided for providing unsolicited email message originators with default control over message removal at a message recipient's location, regardless of whether the unsolicited message has been opened. For instance, a self-removing message is designated as such by the message's originator, and a self-removal enhancement is added to conventional message content such as advertising before the message is transmitted over a computer network toward recipients. At a given recipient's location, the message is automatically deleted without additional effort by the recipient, before or after being displayed, according to the originator's instructions unless they are overridden by the recipient. Thus, the burden of removing unsolicited email messages is transferred from recipients to the message's originators.

22 Claims, 3 Drawing figures

☐ 4. Document ID: US 6615242 B1

L5: Entry 4 of 14 File: USPT Sep 2, 2003

US-PAT-NO: 6615242
DOCUMENT-IDENTIFIER: US 6615242 B1

TITLE: Automatic uniform resource locator-based message filter

DATE-ISSUED: September 2, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Riemers; Bill C.	Eatontown	NJ		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
AT&T Corp.	New York	NY			02

APPL-NO: 09/ 474009 [PALM]
DATE FILED: December 28, 1999

PARENT-CASE:
CROSS-REFERENCE TO RELATED APPLICATIONS This application claims the benefit of U.S. provisional application No. 60/113,975, filed on Dec. 28, 1998.

INT-CL: [07] G06 F 15/16

US-CL-ISSUED: 709/206; 709/225
US-CL-CURRENT: 709/206; 709/225

FIELD-OF-SEARCH: 709/206, 709/225, 709/207, 709/229

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
5996011	November 1999	Humes	709/206
6052709	April 2000	Paul	709/202
6112181	August 2000	Shear et al.	705/1
6138149	October 2000	Ohmura	705/26
6161130	December 2000	Horvitz et al.	707/5
6240391	May 2001	Ball et al.	379/93.24
6393465	May 2002	Leeds	709/206
6421675	July 2002	Ryan et al.	707/100
6539430	March 2003	Humes	709/225

ART-UNIT: 2142

PRIMARY-EXAMINER: Geckil; Mehmet B.

ABSTRACT:

A system and method for filtering messages to identify spam. A Uniform Resource Locator (URL) is identified in a message, and information is fetched from the site designated by the URL. The fetched information is analyzed to determine if the message that includes the URL is spam. If the message is spam, then a message filtering action is performed, such as deleting the message, displaying the message to the recipient with a flag, and sending the message to a third party.

43 Claims, 2 Drawing figures

☐ 5. Document ID: US 6522945 B2

L5: Entry 5 of 14 File: USPT Feb 18, 2003

US-PAT-NO: 6522945
DOCUMENT-IDENTIFIER: US 6522945 B2
**** See image for Certificate of Correction ****

TITLE: Customer specific packaging line

DATE-ISSUED: February 18, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sleep; Nicholas J.	Royston			GB
Proudfoot; Andrew H.	Royston			GB
Owen; Stephen	Royston			GB
Bargh; Adrian Neil	Royston			GB
Kennedy; Michael	Rahway	NJ		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Merck & Company, Inc.	Rahway	NJ			02

APPL-NO: 09/ 975053 [PALM]
DATE FILED: October 12, 2001

PARENT-CASE:
This application is a divisional of application Ser. No. 08/923,844 filed Sep. 4, 1997 now U.S. Pat. No. 6,317,648, which claims Priority from Provisional Application Ser. No. 60/025,327 filed Sep. 6, 1996.

INT-CL: [07] G06 F 17/00

US-CL-ISSUED: 700/225; 700/216, 700/244, 53/52, 53/53, 53/55, 53/493
US-CL-CURRENT: 700/225; 53/493, 53/52, 53/53, 53/55, 700/216, 700/244

FIELD-OF-SEARCH: 700/216, 700/225, 700/231, 700/244, 700/55, 53/52, 53/53, 53/64, 53/266.1, 53/281, 53/493

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
5208762	May 1993	Charhut et al.	
5504332	April 1996	Richmond et al.	
5522512	June 1996	Archer et al.	
5533606	July 1996	Yuyama	
5660305	August 1997	Lasher et al.	
5671592	September 1997	Yuyama et al.	
5713485	February 1998	Liff et al.	
5713487	February 1998	Coughlin	

5720154	February 1998	Lasher et al.	
5751581	May 1998	Tau et al.	
5761877	June 1998	Quandt	
5765606	June 1998	Takemasa et al.	
5768140	June 1998	Swarz et al.	
5771657	June 1998	Lasher et al.	
5842118	November 1998	Wood, Jr.	455/101
5850187	December 1998	Carrender et al.	340/825.54
6317648	November 2001	Sleep et al.	53/500
6345487	February 2002	Luciano et al.	53/147

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
0517197	December 1992	EP	
2670179	June 1992	FR	
2256629	December 1992	GB	
WO95/30611	November 1995	WO	

ART-UNIT: 3651

PRIMARY-EXAMINER: Tran; Khoi H.

ATTY-AGENT-FIRM: McDermott, Will & Emery

ABSTRACT:

An automated packaging line has capability of filling large and small orders, of one or more bottles, each bottle filled with a respective one of a plurality of different pharmaceutical tablets, in a single run. Structure is provided for filling orders for an individual consumer, for a pharmacist, and for a wholesaler, simultaneously, using differently sized bottles, and providing customized labels for each bottle. A flexible filler station simultaneously fills plural bottles with respective tablets. An intelligent data carrying puck carries each bottle, including therein information describing, among others, the bottle, the customer, the order, the pharmaceutical, the bottle size and label information. Puck handling stations (PHS) are dispersed throughout the line, to verify a number of operations implemented on the line and to reject a puck at the earliest opportunity, while permitting subsequent rejection by a subsequent PHS. The PHS units are substantially identical, with DIP switch modifying operation of the controlling software thereof to implement different features at different points on the line. The pucks are recycled after each pass along the line. An initializing PHS wipes clean the puck data storage and, in a fail safe operation, marks it as a reject. The flexible filler station must mark the puck acceptable. Each subsequent PHS, following the flexible filler station, following a capper and following a label printer, may reject the puck if marked as a reject or if failing to meet various criteria

15 Claims, 17 Drawing figures

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Drawi Desc | Image

☐ 6. Document ID: US 6487586 B2

L5: Entry 6 of 14 File: USPT Nov 26, 2002

US-PAT-NO: 6487586
DOCUMENT-IDENTIFIER: US 6487586 B2

TITLE: Self-removing email verified or designated as such by a message distributor for the convenience of a recipient

DATE-ISSUED: November 26, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ogilvie; John W. L.	Salt Lake City	UT	84105	
Ogilvie; Genie L.	Salt Lake City	UT	84105	

APPL-NO: 09/ 928954 [PALM]
DATE FILED: August 13, 2001

PARENT-CASE:
RELATED APPLICATIONS This application is a division of U.S. patent application Ser. No. 09/618,249 filed Jul. 18, 2000. This application is a continuation-in-part of commonly owned copending application Ser. No. 09/399,066 filed Sep. 18, 1999, through which this application also claims priority to application Ser. No. 60/101,517 filed Sep. 23, 1998 and to application Ser. No. 60/104,138 filed Oct. 14, 1998.

INT-CL: [07] G06 F 15/16

US-CL-ISSUED: 709/206; 709/207, 709/201, 709/220
US-CL-CURRENT: 709/206; 709/201, 709/207, 709/220

FIELD-OF-SEARCH: 709/206, 709/207, 709/203, 709/201, 709/220

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
5029104	July 1991	Dodson et al.	364/514
5036518	July 1991	Tseung	371/32
5125075	June 1992	Goodale et al.	395/200
5283856	February 1994	Gross et al.	395/51
5448759	September 1995	Krebs et al.	340/7.21
5479472	December 1995	Campana, Jr. et al.	379/58
5504897	April 1996	Gans et al.	395/650
5588009	December 1996	Will	371/33
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5632018	May 1997	Otorii	395/200.04
5649186	July 1997	Ferguson	395/610
5657461	August 1997	Harkins et al.	395/333
5692181	November 1997	Anand et al.	395/613
5692183	November 1997	Hapner et al.	395/614
5694616	December 1997	Johnson et al.	395/860
5742668	April 1998	Pepe et al.	379/58
5781901	July 1998	Kuzma	707/10
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6088720	July 2000	Berkowitz et al.	709/206
6115455	September 2000	Picard	379/67.1
6134582	October 2000	Kennedy	709/203
6212265	April 2001	Duphorne	379/100.08
6292789	September 2001	Schutzer	705/34
6314421	November 2001	Sharnoff et al.	707/100
6324569	November 2001	Ogilvie et al.	707/500
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Other Application Claims (claims of application 1384.2.6G:09/619,933 filed Jul. 20, 2000).
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MAPS Can Be a Roadblock to E-Mail Access, Wall Street Journal, B5, Aug. 3, 2000.
Preliminary Amendment to Parent Application (claims of application 1384.2.6B: 09/399,066 filed Sep. 18, 1999).

ART-UNIT: 2152

PRIMARY-EXAMINER: Geckil; Mehmet B.

ATTY-AGENT-FIRM: Computer Law++

ABSTRACT:

Methods, articles, signals, and systems are provided for providing email message originators and distributors with default control over message removal at a message recipient's location, regardless of whether the message has been opened. For instance, a self-removing message is designated as such by the message's originator, and a self-removal enhancement is added to conventional message content before the message is transmitted over a computer network toward one or more recipients. At the recipient's location, the message is automatically deleted without additional effort by the recipient, before or after being displayed, according to the originator's instructions unless they are overridden by the recipient. ISPs and other message distributors may identify messages that should be self-removing, and make them self-removing if they are not. Thus, the burden of removing unsolicited email messages is transferred from recipients to the system and the message's originators and/or to ISPs and other email distributors. Security of messages may also be enhanced.

21 Claims, 3 Drawing figures

☐ 7. Document ID: US 6430562 B1

L5: Entry 7 of 14 File: USPT Aug 6, 2002

US-PAT-NO: 6430562
DOCUMENT-IDENTIFIER: US 6430562 B1

TITLE: Integrated resource management system and method

DATE-ISSUED: August 6, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kardos; Christopher P.	Cedar Rapids	IA		
Xiong; Bin	Iowa City	IA		
Brandt; Russell A.	Center Point	IA		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Electronic Data Systems Corporation	Plano	TX			02

APPL-NO: 09/ 260859 [PALM]
DATE FILED: March 1, 1999

PARENT-CASE:
RELATED APPLICATIONS This application is related to co-pending U.S. patent application Ser. No. 09/260,858, entitled "RECOVERY METHOD AND SYSTEM FOR A RESOURCE MANAGEMENT SYSTEM", filed Mar. 1, 1999.

INT-CL: [07] G06 F 17/30, G06 F 15/16, G06 F 17/60

US-CL-ISSUED: 707/10; 707/2, 707/100, 707/4, 709/206, 709/207, 705/27, 705/37
US-CL-CURRENT: 707/10; 705/27, 705/37, 707/100, 707/2, 707/4, 709/206, 709/207

FIELD-OF-SEARCH: 707/1, 707/100, 707/2, 707/102, 707/3, 707/4, 707/10, 705/26, 705/27, 705/37, 709/206, 709/207

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
4530067	July 1985	Dorr	705/15
4569421	February 1986	Sandstedt	186/39
4797818	January 1989	Cotter	705/15
4882475	November 1989	Miller et al.	235/383
4971406	November 1990	Hanson	345/10
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5444444	August 1995	Ross	340/994
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5648770	July 1997	Ross	340/994
5655008	August 1997	Futch et al.	705/17
5675724	October 1997	Beal et al.	395/182.02
5832459	November 1998	Cameron et al.	705/26
5839117	November 1998	Cameron et al.	705/27
5950188	September 1999	Wildermuth	707/3
5963911	October 1999	Walker et al.	705/7
5991739	November 1999	Cupps et al.	705/26
6026365	February 2000	Hayashi	705/9
6195590	February 2001	Powell	700/36
6219649	April 2001	Jameson	705/8
6289382	September 2001	Bowman-Amuah	709/226

ART-UNIT: 2171

PRIMARY-EXAMINER: Coby; Frantz

ATTY-AGENT-FIRM: Baker Botts LLP

ABSTRACT:

In accordance with one embodiment of the present invention, a method and system for communicating between a plurality of disparate hosts and an order processing system includes generating orders at each of the disparate hosts. The orders are transmitted from each of the hosts to a shared message handler using relational database statements. At the shared message

handler, the orders are stored in a relational database table structure using relational database statements. The orders are transmitted from the relational database table structure of the shared message handler to the order processing system. Responses to the orders are received from the order processing system at the shared message handler. Each of the responses is associated with a corresponding order. The status of the corresponding orders are updated based on the responses and provided to the disparate hosts.

24 Claims, 20 Drawing figures

☐ 8. Document ID: US 6345281 B1

L5: Entry 8 of 14 File: USPT Feb 5, 2002

US-PAT-NO: 6345281
DOCUMENT-IDENTIFIER: US 6345281 B1

TITLE: Recovery method and system for a resource management system

DATE-ISSUED: February 5, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kardos; Christopher P.	Cedar Rapids	IA		
Xiong; Bin	Iowa City	IA		
Brandt; Russell A.	Center Point	IA		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Electronic Data Systems Corporation	Plano	TX			02

APPL-NO: 09/ 260858 [PALM]
DATE FILED: March 1, 1999

PARENT-CASE:
RELATED APPLICATIONS This application is related to copending U.S. patent application Ser. No. 09/260,859, entitled "INTEGRATED RESOURCE MANAGEMENT SYSTEM AND METHOD" filed Mar. 1, 1999.

INT-CL: [07] G06 F 12/00, G06 F 17/30

US-CL-ISSUED: 707/201; 700/28, 700/100, 700/101, 700/107, 700/106, 705/7, 705/8, 705/9, 707/202, 707/203, 707/204
US-CL-CURRENT: 707/201; 700/100, 700/101, 700/106, 700/107, 700/28, 705/7, 705/8, 705/9, 707/202, 707/203, 707/204

FIELD-OF-SEARCH: 700/28, 700/99, 700/100, 700/101, 700/102, 700/104, 700/106, 700/107, 705/7, 705/8, 705/9, 707/1, 707/2, 707/202, 707/37, 707/100, 707/102, 707/201, 707/203, 707/204

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
4530067	July 1985	Dorr	364/900

4569421	February 1986	Sandstedt	186/39
4797818	January 1989	Cotter	364/401
4882475	November 1989	Miller et al.	235/383
4971406	November 1990	Hanson	340/711
5386551	January 1995	Chikira et al.	714/96
5444444	August 1995	Ross	340/994
5533107	July 1996	Irwin et al.	379/201
5648770	July 1997	Ross	340/994
5655008	August 1997	Fuch et al.	379/91.01
5675724	October 1997	Beal et al.	714/4
5963911	October 1999	Walker et al.	705/7
5991739	November 1999	Cupps et al.	705/26
6026365	February 2000	Hayashi	705/9
6195590	February 2001	Powell	700/36
6219649	April 2001	Jameson	705/8

ART-UNIT: 2121

PRIMARY-EXAMINER: Grant; William

ASSISTANT-EXAMINER: Patel; Ramesh

ATTY-AGENT-FIRM: Baker Botts LLP

ABSTRACT:

A recovery method for a resource management system having a message handler for communicating orders from a plurality of disparate hosts to an order processing system for assignment to remote resources includes shutting down the order processing system and the message handler. A restored order processing system is generated by replacing a current version of the order processing system with a previously saved version. The restored order processing system is restarted, as is the message handler. Each order in the restored processing system is set to pending. Orders in the restored order processing system that were closed subsequent to a time of the previously saved version are identified and deleted from the restored order processing system. Orders in the message handler that were transmitted from the message handler to the order processing system subsequent to the time of the previously saved version are identified. The subsequently transmitted orders that remain open in the message handler are then identified and transmitted to the restored order processing system for assignment to the remote resources.

22 Claims, 20 Drawing figures

☐ 9. Document ID: US 6324569 B1

L5: Entry 9 of 14 File: USPT Nov 27, 2001

US-PAT-NO: 6324569
DOCUMENT-IDENTIFIER: US 6324569 B1

TITLE: Self-removing email verified or designated as such by a message distributor for the convenience of a recipient

DATE-ISSUED: November 27, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ogilvie; John W. L.	Salt Lake City	UT	84105	
Ogilvie; Genie L.	Salt Lake City	UT	84105	

APPL-NO: 09/ 618249 [PALM]
DATE FILED: July 18, 2000

PARENT-CASE:
RELATED APPLICATIONS This application is a continuation-in-part of commonly owned copending application Ser. No. 09/399,066 filed Sep. 18, 1999, through which this application also claims priority to application Ser. No. 60/101,517 filed Sep. 23, 1998 and to application Ser. No. 60/104,138 filed Oct. 14, 1998.

INT-CL: [07] G06 F 15/16

US-CL-ISSUED: 709/206; 709/207, 707/500
US-CL-CURRENT: 709/206; 709/207, 715/500

FIELD-OF-SEARCH: 709/206, 709/207, 709/203, 709/217, 709/224, 709/227, 709/249, 379/93.24, 379/93.25, 345/752, 707/500, 706/47, 713/153

PRIOR-ART-DISCLOSED:

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PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
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5125075	June 1992	Goodale et al.	395/200
5239679	August 1993	Murai	455/38.1
5283856	February 1994	Gross et al.	395/51
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5504897	April 1996	Gans et al.	395/650
5588009	December 1996	Will	371/33
5623600	April 1997	Ji et al.	395/187.01
5632018	May 1997	Otorii	395/200.04
5649186	July 1997	Ferguson	395/610
5657461	August 1997	Harkins et al.	395/333
5692183	November 1997	Hapner et al.	395/614
5694616	December 1997	Johnson et al.	395/860
5742668	April 1998	Pepe et al.	379/58
5786817	July 1998	Sakano et al.	345/339
5802320	September 1998	Baehr et al.	395/200.79
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5819046	October 1998	Johnson	395/200.57
5826269	October 1998	Hussey	707/10
5859967	January 1999	Kaufeld et al.	395/186
5958005	September 1999	Thorne et al.	709/202
6029164	February 2000	Birrell et al.	707/3
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Poof! Old E-Mail Disappears, pp. 1-2; Oct. 6, 1999.
A Virtual Shredder, pp. 1-2; Oct. 7, 1999.
Disappearing Inc. Keeps Email Messages Private, pp. 1-3; Oct. 8, 1999.
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Other Application Claims (claims of application 1384.2.6G: 09/619,933 filed Jul. 20, 2000).
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Preliminary Amendment to Parent Application (claims of application 1384.2.6B: 09/399,066 filed Sep. 18, 1999).
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Dreazen, "To Annoyance of Cellphone Users, Text Messages May Well Be Spam", Wall Street Journal B1, Mar. 28, 2001.

ART-UNIT: 212

PRIMARY-EXAMINER: Geckil; Mehmet B.

ATTY-AGENT-FIRM: Computer Law.sup.++

ABSTRACT:

Methods, articles, signals, and systems are provided for providing email message originators and distributors with default control over message removal at a message recipient's location, regardless of whether the message has been opened. For instance, a self-removing message is designated as such by the message's originator, and a self-removal enhancement is added to conventional message content before the message is transmitted over a computer network toward one or more recipients. At the recipient's location, the message is automatically deleted

without additional effort by the recipient, before or after being displayed, according to the originator's instructions unless they are overridden by the recipient. ISPs and other message distributors may identify messages that should be self-removing, and make them self-removing if they are not. Thus, the burden of removing unsolicited email messages is transferred from recipients to the system and the message's originators and/or to ISPs and other email distributors. Security of messages may also be enhanced.

18 Claims, 3 Drawing figures

☐ 10. Document ID: US 6317648 B1

L5: Entry 10 of 14 File: USPT Nov 13, 2001

US-PAT-NO: 6317648
DOCUMENT-IDENTIFIER: US 6317648 B1

TITLE: Customer specific packaging line having containers with tag means containing medication order information

DATE-ISSUED: November 13, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sleep; Nicholas J.	Royston			GB
Proudfoot; Andrew H.	Royston			GB
Owen; Stephen	Royston			GB
Bargh; Adrian Neil	Royston			GB
Kennedy; Michael	Rahway	NJ		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Merck & Co., Inc.	Rahway	NJ			02

APPL-NO: 08/ 923844 [PALM]
DATE FILED: September 4, 1997

PARENT-CASE:
RELATED APPLICATION This application claims priority from the provisional patent application Ser. No. 60/025,327, Filed Sep. 6, 1996, entitled CUSTOMER SPECIFIC PACKAGING LINE, which is incorporated herein by reference.

INT-CL: [07] G06 F 7/00

US-CL-ISSUED: 700/216; 53/500
US-CL-CURRENT: 700/216; 53/500

FIELD-OF-SEARCH: 700/216, 700/240, 700/241, 53/500, 53/498, 53/493, 53/55

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
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5504332	April 1996	Richmond et al.	
5522512	June 1996	Archer et al.	
5533606	July 1996	Yuyama	
5660305	August 1997	Lasher et al.	
5671592	September 1997	Yuyama et al.	
5713485	February 1998	Liff et al.	
5713487	February 1998	Coughlin	
5720154	February 1998	Lasher et al.	
5751581	May 1998	Tau et al.	
5761877	June 1998	Quandt	
5765606	June 1998	Takemasa et al.	
5768140	June 1998	Swartz et al.	
5771657	June 1998	Lasher et al.	
5842118	November 1998	Wood, Jr.	455/101
5850187	December 1998	Carrender et al.	340/825.54

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
0 517 197	December 1992	EP	
2670179	June 1992	FR	
2256629	December 1992	GB	
WO 95/30611	November 1995	WO	

ART-UNIT: 361

PRIMARY-EXAMINER: Ellis; Christopher P.

ASSISTANT-EXAMINER: Tran; Khoi H.

ATTY-AGENT-FIRM: McDermott, Will & Emery

ABSTRACT:

An automated packaging line for filling large and small orders, of one or more bottles, each bottle filled with a respective one of a plurality of different pharmaceutical tablets, in a single run. An intelligent data carrying puck carries each bottle, including therein information describing, among others, the bottle, the customer, the order, the pharmaceutical, the bottle size and label information. Puck handling stations (PHS) are dispersed throughout the line, to verify a number of operations implemented on the line and to reject a puck at the earliest opportunity, while permitting subsequent rejection by a subsequent PHS. The PHS units are substantially identical, with DIP switch modifying operation of the controlling software thereof to implement different features at different points on the line.

1 Claims, 17 Drawing figures

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Drawi Desc | Image

☐ 11. Document ID: US 5758083 A

L5: Entry 11 of 14 File: USPT May 26, 1998

US-PAT-NO: 5758083
DOCUMENT-IDENTIFIER: US 5758083 A

TITLE: Method and system for sharing information between network managers

DATE-ISSUED: May 26, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Singh; Surinder	Cupertino	CA		
St. Pierre; Robert P.	San Jose	CA		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Sun Microsystems, Inc.	Palo Alto	CA			02

APPL-NO: 08/ 550087 [PALM]
DATE FILED: October 30, 1995

INT-CL: [06] H04 B 15/173

US-CL-ISSUED: 395/200.53; 395/200.54, 395/200.32, 395/680, 370/229, 370/254
US-CL-CURRENT: 709/223; 370/229, 370/254, 709/202, 709/224, 719/310

FIELD-OF-SEARCH: 395/200.01, 395/200.02, 395/200.06, 395/200.09, 395/200.11, 395/200.15, 395/200.54, 395/200.32, 395/680, 364/514A, 364/514B, 364/514C, 364/514R, 370/229, 370/254

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
5317568	May 1994	Bixby et al.	370/85.6
5473608	December 1995	Gagne et al.	370/85.13
5517622	May 1996	Ivanoff et al.	395/200.13
5634011	May 1997	Auerbach et al.	395/200.15
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Duffy, "Cabletron Widens Spectrum", Network World, May 15, 1995.
"Cooperative Consoles.TM. 1.0 Administrator's Guide" by SunSoft of Sun Microsystems, Inc., Mountain View, CA, 1994.

ART-UNIT: 274

PRIMARY-EXAMINER: Trammell; James P.

ASSISTANT-EXAMINER: Assouad; Patrick J.

ATTY-AGENT-FIRM: Beyer & Weaver, LLP

ABSTRACT:

A technique for managing a network by sharing information between distributed network managers which manage a different portion of a large network is disclosed. By sharing such network information, the network management performed by the distributed network managers can inform site managers not only local network conditions but also about network conditions on other remote networks. A filtering operation is used to determine that portion of the network information deemed important to forward to another network manager. A database synchronization operation is also optionally provided so that databases of each network manager, which store topology information concerning the particular portion of the network, can be automatically synchronized.

37 Claims, 12 Drawing figures

☐ 12. Document ID: US 4932826 A

L5: Entry 12 of 14 File: USPT Jun 12, 1990

US-PAT-NO: 4932826
DOCUMENT-IDENTIFIER: US 4932826 A

TITLE: Automated cartridge system

DATE-ISSUED: June 12, 1990

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Moy; Michael E.	Lafayette	CO		
Beavers; Kelly J.	Boulder	CO		
Bray; Stuart W.	Louisville	CO		
Goodknight; Frank A.	Boulder	CO		
Kummli; Paul	Boulder	CO		
Kutasy; Eugene	Boulder	CO		
Lucchesi; Raymond L.	Broomfield	CO		
Munro; Frederick G.	Broomfield	CO		
Sellke; Richard G.	Denver	CO		
Studebaker; Thomas J.	Boulder	CO		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Storage Technology Corporation	Louisville	CO			02

APPL-NO: 07/ 398388 [PALM]
DATE FILED: August 24, 1989

PARENT-CASE:
This case is a division of application Ser No. 07/007,047 filed Jan. 27, 1987, now U.S. Pat. No. 4,864,511.

INT-CL: [05] B65G 1/06

US-CL-ISSUED: 414/277; 414/281, 360/92
US-CL-CURRENT: 414/277; 360/92, 414/281

FIELD-OF-SEARCH: 414/266, 414/267, 414/268, 414/277, 414/279, 414/281, 414/331, 360/92

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
3302804	February 1967	Harris	414/267 X
3715040	February 1973	Polus et al.	414/277 X
3938190	February 1976	Semmlow et al.	360/92
4232988	November 1980	Kochanneck	414/281 X
4271440	June 1981	Jenkins et al.	360/92
4654727	March 1987	Blum et al.	360/71
4742405	May 1988	Teranishi	360/92
4779151	October 1988	Lind et al.	360/92
4802035	January 1989	Ohtsuka	360/92
4864438	September 1989	Munro	364/478 X

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
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0016723	April 1956	DE	414/267
0016274	February 1978	JP	414/267
0156106	December 1980	JP	414/267
0150908	July 1986	JP	414/277
1172840	August 1985	SU	414/267

OTHER PUBLICATIONS

Schaaf, "Tape Library Apparatus", IBM Technical Disclosure Bulletin, vol. 16, No. 10, Mar. 1974.

ART-UNIT: 317

PRIMARY-EXAMINER: Werner; Frank E.

ASSISTANT-EXAMINER: VandenBosche; John

ATTY-AGENT-FIRM: Dorr, Carson, Sloan & Peterson

ABSTRACT:

A storage and retrieval subsystem in a data processing system includes a plurality of magnetic tape cartridges, a host computer, and a library storage module storing the plurality of magnetic tape cartridges in substantially upright positions. The library storage module includes a first cylindrical array of storage cells centered about a vertical axis, a second cylindrical array concentrically arranged about the first array, and a library tape unit including a plurality of tape drives, each of the tape drives being adapted to receive one of the magnetic tape cartridges in a substantially horizontal transducing position. A robot within

the library storage module is used to transfer selected ones of the magnetic tape cartridges between their substantially upright positions and the substantially horizontal transducing positions at a selected tape drive. A first controller outboard the channel communicating with the host computer is adapted to receive commands from the host computer for interfacing between the host computer and the library storage module, and a second controller inboard of the channel is adapted to receive commands from the outboard controller for interfacing between the outboard controller and the robot.

14 Claims, 77 Drawing figures

☐ 13. Document ID: US 4928245 A

L5: Entry 13 of 14 File: USPT May 22, 1990

US-PAT-NO: 4928245
DOCUMENT-IDENTIFIER: US 4928245 A

TITLE: Automated cartridge system

DATE-ISSUED: May 22, 1990

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Moy; Michael E.	Lafayette	CO		
Beavers; Kelly J.	Boulder	CO		
Bray; Stuart W.	Louisville	CO		
Goodknight; Frank A.	Boulder	CO		
Kummli; Paul	Boulder	CO		
Kutasy; Eugene	Boulder	CO		
Lucchesi; Raymond L.	Broomfield	CO		
Munro; Frederick G.	Broomfield	CO		
Sellke; Richard G.	Denver	CO		
Studebaker; Thomas J.	Boulder	CO		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Storage Technology Corporation	Louisville	CO			02

APPL-NO: 07/ 398280 [PALM]
DATE FILED: August 24, 1989

PARENT-CASE:
This is a divisional of application Ser. No. 007,047, filed Jan. 27, 1987, now U.S. Pat. No. 4864511.

INT-CL: [05] G11B 15/00, G11B 23/00

US-CL-ISSUED: 364/513; 364/478, 369/39, 360/71, 360/92, 242/180
US-CL-CURRENT: 700/218; 242/338.4, 360/71, 360/92

FIELD-OF-SEARCH: 364/468, 364/478, 364/513, 369/39, 242/180, 360/71, 360/92

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
3812537	May 1974	Grae et al.	242/180
3831197	August 1974	Beach et al.	360/71
3920195	November 1975	Sills et al.	242/180
3938190	February 1976	Semmlow et al.	360/92
4271440	June 1981	Jenkins et al.	360/92
4273342	June 1981	Gilson et al.	369/39
4519055	May 1985	Gilson	369/39
4527262	July 1985	Manto	369/39
4607354	August 1986	Ishibashi et al.	369/39
4608679	August 1986	Rudy et al.	369/39
4654727	March 1987	Blum et al.	360/71

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
700213	December 1964	CA	360/92
170953	August 1986	JP	360/92
1499320	February 1978	GB	360/92

OTHER PUBLICATIONS

IBM Technical Disclosure Bulletin; vol. 16, No. 10; Mar. 1984; Tape Library Apparatus; R. L. Schaaf.

ART-UNIT: 236

PRIMARY-EXAMINER: MacDonald; Allen

ATTY-AGENT-FIRM: Dorr, Carson, Sloan & Peterson

ABSTRACT:

A storage and retrieval subsystem in a data processing system includes a plurality or magnetic tape cartridges, a host computer, and a library storage module storing the plurality of magnetic tape cartridges in substantially upright positions. The library storage module includes a first cylindrical array of storage cells centered about a vertical axis, a second cylindrical array concentrically arranged about the first array, and a library tape unit including a plurality of tape drives, each of the tape drives being adapted to receive one of the magnetic tape cartridges in a substantially horizontal transducing position. A robot within the library storage module is used to transfer selected ones of the magnetic tape cartridges between their substantially upright positions and the substantially horizontal transducing positions at a selected tape drive. A first controller outboard the channel communicating with the host computer is adapted to receive commands from the host computer for interfacing between the host computer and the library storage module, and a second controller inboard of the channel is adapted to receive commands from the outboard controller for interfacing between the outboard controller and the robot.

15 Claims, 78 Drawing figures

☐ 14. Document ID: US 4864511 A

L5: Entry 14 of 14 File: USPT Sep 5, 1989

US-PAT-NO: 4864511
DOCUMENT-IDENTIFIER: US 4864511 A

TITLE: Automated cartridge system

DATE-ISSUED: September 5, 1989

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Moy; Michael E.	Lafayette	CO		
Bray; Stuart W.	Louisville	CO		
Kummli; Paul	Boulder	CO		
Beavers; Kelly J.	Boulder	CO		
Goodknight; Frank	Boulder	CO		
Baer; James R.	Broomfield	CO		
Hughes; Timothy C.	Lafayette	CO		
Seabury; John L.	Boulder	CO		
Nugent; Steven F.	Portland	OR		
Studebaker; Thomas J.	Boulder	CO		
Kutasy; Eugene	Boulder	CO		
Sellke; Richard G.	Denver	CO		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Storage Technology Corporation	Louisville	CO			02

APPL-NO: 07/ 007047 [PALM]
DATE FILED: January 27, 1987

INT-CL: [04] G11B 15/00

US-CL-ISSUED: 364/478; 369/39, 242/180, 360/92
US-CL-CURRENT: 700/218; 242/335, 360/92

FIELD-OF-SEARCH: 364/478, 364/513, 369/33, 369/39, 242/180, 242/181, 360/88, 360/92, 360/95

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
3812537	May 1974	Grae et al.	242/180 X
3831197	August 1974	Beach et al.	360/92 X
3920195	November 1975	Sills et al.	242/180
3938190	February 1976	Semmlow et al.	360/92
4271440	June 1981	Jenkins et al.	360/92
4273342	June 1981	Gilson et al.	369/39 X
4519055	May 1985	Gilson	369/39 X

4527262	July 1985	Manto	369/39 X
4607354	August 1986	Ishibashi	369/39
4608679	August 1986	Rudy et al.	369/39 X
4654727	March 1987	Blum et al.	360/92 X

ART-UNIT: 236

PRIMARY-EXAMINER: MacDonald; Allen

ATTY-AGENT-FIRM: Woodcock Washburn Kurtz Mackiewicz & Norris

ABSTRACT:

A storage and retrieval subsystem in a data processing system includes a plurality of magnetic tape cartridges, a host computer, and a library storage module storing the plurality of magnetic tape cartridges in substantially upright positions. The library storage module includes a first cylindrical array of storage cells centered about a vertical axis, a second cylindrical array